

→ Abstracts

Articles appearing in the December 2018 issue

The neural basis of fatigue in multiple sclerosis: A multimodal MRI approach

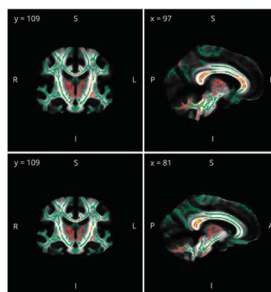
Background Fatigue is a frequent disabling symptom in multiple sclerosis (MS), but its pathophysiology remains incompletely understood. This study aimed to explore the underlying neural basis of fatigue in patients with MS.

Methods We enrolled 60 consecutive patients with MS and 60 healthy controls (HC) matched on age, sex, and education. Fatigue was assessed using the Portuguese version of the Modified Fatigue Impact Scale (MFIS). All participants underwent 3T brain MRI (conventional and diffusion tensor imaging [DTI] sequences). White matter (WM) focal lesions were identified and T1/T2 lesion volumes were computed. Tract-based spatial statistics were applied for voxel-wise analysis of DTI metrics fractional anisotropy and mean diffusivity (MD) on normal-appearing WM (NAWM). Using Freesurfer software, total and regional volumes of cortical and subcortical gray matter (GM) were calculated.

Results Compared to HC, patients with MS scored significantly higher on MFIS (33.8 ± 19.7 vs 16.5 ± 15.1 , $p < 0.001$). MFIS scores were not significantly correlated with T1/T2 lesion volumes, total GM volume, or any regional volume of cortical and subcortical GM. Significant correlations were found between global scores of MFIS and MD increase of the NAWM skeleton, including corona radiata, internal capsule, external capsule, corticospinal tract, cingulum, corpus callosum, fornix, superior longitudinal fasciculus, superior fronto-occipital fasciculus, sagittal stratum, posterior thalamic radiation, cerebral peduncle, and uncinate fasciculus.

Conclusions In this study, fatigue was associated with widespread NAWM damage but not with lesion load or GM atrophy. Functional disconnection, caused by diffuse microstructural WM damage, might be the main neural basis of fatigue in MS.

NPub.org/NCP/9318a



Status epilepticus alert reduces time to administration of second-line antiseizure medications

Background Status epilepticus (SE) is a neurologic emergency with high morbidity and mortality. Delays in SE treatment are common in clinical practice and can be associated with poorer outcomes. Our goal was to determine whether the implementation of an SE alert protocol improves time to administration of a second-line antiseizure medication (ASM) in hospitalized adults.

Methods We developed and implemented an inpatient SE alert system. A quasiexperimental cohort study was performed. We analyzed all patients aged 18–85 years who were managed at the University of Kentucky Medical Center using the SE alert protocol between March 2015 and June 2017 ($n = 19$). Controls were the first 20 consecutive patients treated for SE over the same time period, but who were managed with usual care (i.e., without SE alert protocol).

Results Time to administration of a second-line ASM was shorter with the use of the SE alert system (22.21 ± 3.44 minutes) compared to usual care (58.30 ± 6.72 minutes; $p < 0.0001$).

Conclusion Implementation of an SE alert system led to a marked improvement in time to administration of a second-line ASM.

Classification of evidence This study provides Class III evidence that for adult inpatients treated for SE, implementation of an SE alert protocol reduces time to administration of second-line ASM.

NPub.org/NCP/9318b

Neurology resident	<ul style="list-style-type: none"> • Perform clinical evaluation • Enter orders for ASM • Determine need for EEG and neuroimaging studies • Communicate with other teams • Oversee patient management
Pharmacy resident	<ul style="list-style-type: none"> • Verify medication orders • Bedside admixture of ASM • Facilitation of medication delivery from central pharmacy • Therapeutic drug monitoring as appropriate
Rapid response team	<ul style="list-style-type: none"> • Evaluate need for airway management • Assist with intravenous line placement and drug administration
House officer	<ul style="list-style-type: none"> • Expedite bed assignment in the event that escalations in level of care are required

Practice Current

Neurology® Clinical Practice has launched their next Practice Current survey on a universally challenging topic: “How do you diagnose and treat post-concussive headache?” Please consider completing the survey to add your own perspective. In the June 2019 issue, readers have access to opinions from David W. Dodick, MD (US), Mohammad Wasay, MBBS, MD, FRCP (Pakistan), and Karen M. Barlow, MSc, MBChB, MRCPCH, RACP (Australia).

NPub.org/NCP/pc09

Neurology[®]

What's happening in *Neurology*[®] *Clinical Practice*
Neurology 2019;93;786
DOI 10.1212/WNL.00000000000008390

This information is current as of October 28, 2019

Updated Information & Services

including high resolution figures, can be found at:
<http://n.neurology.org/content/93/18/786.full>

Permissions & Licensing

Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.neurology.org/about/about_the_journal#permissions

Reprints

Information about ordering reprints can be found online:
<http://n.neurology.org/subscribers/advertise>

Neurology[®] is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2019 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

